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NATIONAL SHIPBUILDING RESEARCH PROGRAM

U.S. DEPARTMENT OF COMMERCE

MARITIME ADMINISTRATION

in cooperation with

BATH IRON WORKS CORPORATION

JUNE 1, 1980

NATIONAL SHIPBUILDING STANDARDS PROGRAM

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EXECUTIVE SUMMARY

Background

Based upon the results of several studies conducted under the Ship Producibility Research Program between 1973 and 1976, and the recommendations of a shipbuilding standards planning conference (Castine Conference) in late 1976, SNAME Panel SP-6 on Standards & Specifications was reactivated in 1977 to act as the industry's steering committee for a coordinated shipbuilding standards effort. As a direct result of SNAME Ship Production Committee and Panel SP-6 activities in early 1978, two major steps toward a viable National Shipbuilding Standards Program were implemented: (1) a new voluntary, industry-wide ASTM Committee on Shipbuilding Standards (F-25) was established with some 200 members serving on 12 technical subcommittees, and (2) Bath Iron Works and MarAd initiated major cooperative research program efforts to survey existing standards and to fund the immediate development of high priority material and design/construction standards.

Fortunately, implementation of the voluntary industry effort to increase and improve standardization in the shipbuilding industry has coincided with DOD and U.S. Navy increased emphasis on the use of commercial standards and specifications; a policy which has been further reinforced by the Jan. 17, 1980 issuance of OMB Circular No. A-119, "Federal Participation in the Development and Use of Voluntary Standards." Additionally, recent months have seen the more progressive shipyards in this country embark on programs to adopt and implement innovative foreign approaches

to shipbuilding (e.g. the Japanese concepts of zone outfitting and accuracy control) , and in every instance standards have surfaced as an essential component of the more productive systems.

Accomplishments

During the past two years, more than fifty new shipbuilding standards have been initiated through the efforts of SNAME Panel SP-6 and ASTM Committee F-25 on Shipbuilding. A status summary listing of these standards is included in Sections I and II of this report, respectively.

While the initial emphasis has been concentrated on providing a mechanism for the ongoing development and maintenance of industry-wide voluntary consensus standards through ASTM Committee F-25 on Shipbuilding; a major effort is now being planned and coordinated by SNAME Panel SP-6 to further identify and address specific standards requirements in support of shipyard implementation of advanced techniques such as pre-outfitting, outfit module construction, accuracy control, and computer aided design and manufacturing. In addition to the continuing clarification of standards requirements resulting from the individual initiatives of several major shipyards, the second half of 1980 will include two particularly significant developments relative to the standards program. First; detailed information will be made available from the Levingston Shipbuilding/IHI Japanese Technology Transfer Program on the evaluation and application of standards in the initial phase of this five ship F-32 bulk carrier program. . .already identified by

Levingston as one of the most significant areas of the study. Secondly, a priority MarAd sponsored task will be initiated through SNAME Panel SP-6 to develop a Standards Program Long-Range Plan which will indicate specifically what standards are needed, time-phased priorities for development, actions required and responsibilities.

Summary

In summary; the U.S. shipbuilding industry has, for the first time, a well-organized and coordinated National Shipbuilding Standards Program. The timing is right; enhanced by the U.S. Navy's implementation of government standards policy, and underscored by the industry's need to take aggressive steps to improve productivity. The investment required to actively support the program is minimal; the potential return is significant ,particularly when coordinated with an effective in-house standards program. In conclusion, shipyards who are not actively participating as members of SNAME Panel SP-6 are encouraged to reassess their position, and an open invitation is extended for all interested parties, to become active in the work of ASTM Committee F-25.

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PART I - MARAD/SNAME SPONSORED STANDARDS PROGRAM

Introduction

Since 1973, Bath Iron Works Corporation has sponsored the Ship Producibility Research Program, one of several elements of the Maritime Administrations National Shipbuilding Research Program. In 1977 it was decided that industry needs and program objectives could be best served by focusing program efforts in two principal areas; (1) Shipbuilding Standards and Specifications, and (2) Shipbuilding Industrial Engineering. During the past two years, significant progress has been made in both areas through the efforts of two new technical panels (SP-6 on Standards & Specifications and SP-8 on Industrial Engineering) under the SNAME Ship Production Committee, working in close cooperation with the American Society for Testing and Materials (ASTM) and the American Insitute of Industrial Engineers (AIIE) respectively.

The objective of this report is to summarize accomplishments to date, current activities, and future plans of the Shipbuilding Standards and Specifications program.

Background

Between 1973 and 1976 several studies were conducted under the Ship Producibility Program, all of which indicated that the development of shipbuilding standards offered significant potential for reducing the time and cost of ship construction, while at the same time improving the production process and overall quality. It was

further concluded that to effectively realize the benefits of standardization, a nationally coordinated program would be required. The following events highlight the development of the National Shipbuilding Standards Program:

Castine Conference (June, 1976)

This conference on standards for the U.S. shipbuilding industry was attended by representatives from shipyards, various standards organizations, government and regulatory agencies. The objective of the session was to review the use of standards in other industries and in foreign shipbuilding, to discuss the potential benefits of standardization, and to assess industry interest in supporting a major new U.S. initiative.

The conferees concluded that the development of standards for design, production and procurement was technically and economically feasible, and that a national program should be implemented.

Reactivation of SNAME Panel SP-6 (November, 1977

SNAME Panel SP-6 on Standards & Specifications was reactivated to serve as the industry's steering committee for the National Shipbuilding Standards Program. Initial MarAd sponsored standards development projects were identified and ASTM was selected as the appropriate forum for ongoing standards development and maintenance.

ASTM Planning Meeting (January, 1978)

Thirty-five representatives from all segments of the shipbuilding industry (shipyards, owners, design agents, vendors, ABS, USCG and the U.S. Navy) met at Philadelphia and agreed that a new ASTM committee on shipbuilding should be formed.

ASTM Organizational Meeting (June, 1978)

More than 175 representatives from every segment of the shipbuilding industry met at Philadelphia and formally established ASTM Committee F-25 on Shipbuilding.

SNAME Panel SP-6

Since its reactivation in 1977, membership on the SNAME Standards & Specifications Panel has increased to nine shipyards plus the U.S. Navy (NAVSEA) and MarAd. The current active members are:

Mr. S. H. Bailey
Manager, Engineering Standards
Avondale Shipyards, Inc.

Dr. R. T. Bicicchi
Manager, Central Standards
Sun Ship, Inc.

Mr. J. J. Garvey
Program Manager
MarAd

Mr. A. J. Grubowski
Wiley Manufacturing

Mr. J. Haas
Director, Engineering Standards Division
NAVSEA

Mr. R. L. Kelley
Newport News Shipbuilding & Drydock Co.

Mr. J. L. Kilcrease
Chief Engineer
Levingston Shipbuilding Co.

Mr. J. C. Mason (Chairman)
Program Manager
Bath Iron Works Corp.

Mr. V. W. OrlovskY
Chief, Material Standards Section
Bath Iron Works Corp.

Mr. P. L. Semery
Chief Engineer
Davie Shipbuilding, Ltd.

Mr. G. A. Uberti
Program Manager
National Steel & Shipbuilding Co.

Mr. F. X. Wilfong
Bethlehem Steel Corp.
Sparrows Point Shipyard

Mr. S. Wolkow (Secretary)
Project Engineer
Bath Iron Works Corp.

Most significantly, recent months and weeks have seen several of the existing member yards place increased emphasis on standardization activities, and several other yards either have or are planning to initiate internal standards programs. It is projected that 3-4 additional shipyards will establish formal membership on SNAME Panel SP-6 in conjunction with the upcoming summer meeting.

The principal role of SNAME Panel SP-6 in the National Shipbuilding Standards Program is to set shipyard plans and priorities for standards development, and through the SNAME Ship Production Committee, to recommend cooperative MarAd/Industry cost-shared projects which will accelerate direct benefits to the industry. Another way to describe the initial role of SNAME Panel SP-6 and the BIW/MarAd sponsored program is as a “pump priming” function for the voluntary standards development of ASTM Committee F-25. In simple terms, the MarAd/Industry support is resulting in the development of 3-4 times as many standards as would be possible through strictly voluntary development (as indicated by the summaries of SNAME/MarAd sponsored and ASTM Committee F-25 standards development, Appendices A and B to this report respectively).

In addition to individual design/construction standards development, a major task was completed in the past year to survey and

catalog existing standards and regulations used in the U.S. shipbuilding industry, and selected foreign shipbuilding standards (Japanese, Swedish, West German, and ISO/IEC[1]). Computer listings of those standards by subject, originator, Navy SWBS (Ship Work Breakdown Structure) Code, and ASTM Technical Subcommittee have been made available for reference, and the overwhelming message of the final report is that a coordinated effort to develop, maintain and use shipbuilding standards is necessary for the U.S. industry.

Finally, in the very near future, a report entitled "Weld Defect Tolerance Study" will be published under the auspices of the SP-6/MarAd program. It is hoped that this report will provide sufficiently sound engineering rationale to develop new weld acceptance standards which will eliminate much of the current costly rework of innocuous defects, e.g. slag and porosity. The report concludes that in many cases repairing such defects can have a more deleterious effect on the structure, while adding several hundred thousand dollars to the total cost of the ship.

Future Plans

The FY-80 BIW/MarAd Standards and Specifications program represents the consensus of SNAME Panel SP-6 and is based on experience and knowledge gained to date in the standards effort, and the careful consideration of recent developments/recomendations from several sources, e.g. the 1979 comparative survey of U.S. shipbuilding technology, findings of the Levingston/IHI Technology Transfer Program, recognition of the potential needs for zone

[1]ISO - International Organization for Standardization
IEC - International Electrotechnical Commission

outfitting and outfit planning, and the late 1979 Ship Production Committee survey of Japanese shipbuilding technology.

The specific FY-80 projects will involve cooperative efforts with five major shipyards and are intended to address recognized industry needs and high priorities to optimize both the near and long term benefits to the industry. These particular needs/ priorities are:

(1) The need for a formal long-range industry plan with specific goals and responsibilities.

(2) The need to support major near-term efforts to develop functional design/engineering standards to support outfit unit construction and reduced construction times.

(3) The need to continue development of detailed design/construction standards.

(4) The need to better differentiate between industry consensus and individual yard standards requirements.

As always, the real key to the success or effectiveness of efforts such as the National Shipbuilding Standards Program is the active participation and contribution of the principal organizations involved. In this regard, it is hoped that those shipyards not currently active in the work of SNAME Panel SP-6 will seriously re-evaluate their position. The cost of active participation may be summarized as:

- Attendance at 3-4 one-day panel meetings per year.
- Coordinating yard technical review and comment on draft standards (15-20 per year).
- Coordinating yard review and comment on technical reports (l-2 per year) .
- Optional participation in related workshops, seminars, or symposiums.

The benefits of participation vary from simply keeping current on progress and developments (passive mode) , to actively supporting projects (MarAd funded) which will not only fulfill common industry needs, but are also directly applicable for the individual yard involved.

PART II - ASTM COMMITTEE F-25 VOLUNTARY STANDARDS DEVELOPMENT

Background

First, the American Society for Testing and Materials (ASTM) is simply a non-profit management system for the development of voluntary consensus standards. The ASTM staff itself numbers fewer than 100 people and, in fact, voluntary industry representatives serving on the Committee are ASTM. In the late 1960's the ASTM charter was modified to include the development of standards for products, systems, and services in addition to the more familiar material standards such as specifications for steel, non-ferrous metals,plastic, etc. It should also be noted that ASTM is the world's largest source of voluntary consensus standards and that all ASTM standards are submitted to ANS1[2] (the American National Standards Institute) for parallel approval as American National Standards (formeriy ASA standards). Recognizing the problem of semantics surrounding the word "standard," ASTM well uses it as an adjective in conjunction with five types of standards - specifications, practices, definitions, classifications, and test methods.

[2] ANSI is not in the business of writing standards, but performs the function of national coordinator; ASTM is the major standards writing organization.

On May 31-June 1, 1978 over 175 senior representatives of all segments of the shipbuilding industry (shipbuilders, owners/ operators, design agents, major vendors, regulatory and government agencies, and academia) met at ASTM Headquarters in Philadelphia and officially organized the new ASTM Committee F-25 on Shipbuilding. Again the status of standards development within committee F-25 is summarized in Appendix B to this report.

Committee F-25 Organization

The Committee F-25 current officers and organization is summarized below:

F-25 Officers

Chairman	R. J. Taylor, EXXON International Co.
1st Vice Chairman	E. A. Schorsch, Bethlehem Steel Corp.
2nd Vice Chairmsn	Radm. E. J. Otth, USN, NAVSEA
3rd Vice Chairman	H. F. Greiner, Sealol, Inc.
Secretary	J. C. Mason, Bath Iron Works Corp.

Technical Subcommittees and Chairmen

F-25.01	Materials	
		J. C. West, Bethlehem Steel Corp.
F-25.02	Coatings	
		R. T. Bicicchi, Sun Ship, Inc.
F-25.03	Outfitting	
		N. M. Stiglich, Eness R & D Corp.
F-25.04	Hull Structure	
		W. M. Hannan, ABS
F-25 .05	HVAC	
		(Merged with F-25.03 & F-25.11)

F-25.06 Ship Control & Automation

F. J. Kennedy, NAVSSES Philadelphia

F-25. 07 General Support Requirements

S. H. Bailey, Avondale Shipyards, Inc.

F-25.08 Deck Machinery

D. G. Pettit, NAVSEA

F-25.10 Electrical/Electronics

F. E. Anderson, NAVSEA

F-25.11 Machinery

B. J. Walsh, NAVSEA

F-25.12 Welding

S. H. Morrison, GD/Electric Boat

F-25.13 Piping

H. F. Greiner, Sealol, Inc.

Progress to Date

Since Committee F-25 was established nearly two years ago, some 160 individuals have established official membership status. In many cases, however, several people from an organization are active on the committee behind the one official representative. As is obvious from preceding comments in this report, and from the list of technical subcommittee chairmen, the U.S. Navy has been particularly supportive of Committee activities in almost every area.

It must be emphasized that development of consensus standards within formal due process requirements of a recognized forum such as ASTM is a slow process. To summarize the normal procedure, a task group of 2-5 people is formed to do the required background

work and prepare an initial draft, which is reviewed by its parent subcommittee through a balloting procedure. If the document is approved by two-thirds of those returning ballots (a minimum of 60% of voting interests must return ballots), the document proceeds to the main committee ballot. Here, 90% of those returning ballots (again a 60% return is required), must approve the document. It then goes to a Society ballot where a minimum of 50 ballots is required, and 90% must vote affirmatively to make it an approved ASTM standard. A single negative ballot at any stage returns the proposed standard to the technical subcommittee for resolution. The foregoing procedural description should provide greater significance to the advanced status of many of the standards listed in Appendices A and B, and also emphasize the critical role of the BIW/MarAd program and SNAME SP-6 activities in accelerating benefits to the industry. According to ASTM, Committee F-25 can be proud of an extremely rapid and effective start-up in comparison to most other newly established committees.

Future Plans

Efforts have already been initiated during 1980 to better plan and organize standards development under the auspices of Committee F-25. A special Shipyard Planning Workshop was held on May 19, 1980 to increase industry awareness and participation, and to provide the critical input for committee long-range plans and priorities. Similar workshops are contemplated in the future with representatives of other industry segments, e.g. design agents, owners, and regulatory/goverment agencies.

To further generate interest and participation, a call for papers was recently issued for what is planned to be the first of a series of joint ASTM/SNAME Shipbuilding Standards Symposia. This meeting is planned for October 21-22, 1981; and will immediately follow a special two-day Joint Ship Structure Committee symposium at the same location (a copy of the call for papers is included at the end of this report for those who may be interested in contributing).

In conclusion, it is anticipated that the first official National Shipbuilding Standard(s) will be published by ASTM in late 1980. Initially these standards will be published in Part 46 of the ASTM Annual Book of Standards,; however, once a sufficient number of documents has been developed, it is hoped that they will be compiled and published in a special volume for shipbuilding.

Membership on ASTM Committee F-25 is open to any interested party, and again, the long-term success of the effort depends greatly on the quantity and quality of voluntary industry support. The cost of active participation on ASTM Committee F-25 may be summarized as:

- Establishing official ASTM membership (for voting and correspondence purposes) either under an organizational membership or through an individual $35/year administrative fee.
- Attendance at regular committee meetings; two three-day sessions per year rotated among various major cities.
- Reviewing, commenting and voting on several draft standards per year.
- Voluntarily contributing additional time, either as a committee officer or as a member of a working task group.

Again, the benefits of participation vary from simply keeping current on programs and developments (passive mode) , to protecting the interests of one's organization, to actively contributing to the development of new or improved standards which will directly benefit the industry and individual organizations.

It is suggested that any major organization, in any segment of the shipbuilding and repair industry, which has not been active on ASTM Committee F-25 should seriously re-evaluate their position.

PART III - CONCLUSIONS

Conclusions

In summary, this industry-initiated standards program, with the critical support of MarAd and the U.S. Navy, and a reasonable contribution from the major organizations involved, will have a significant near and long-term effect on reducing shipbuilding costs and construction times. Some examples of the impact of standards in the general management cycle are:

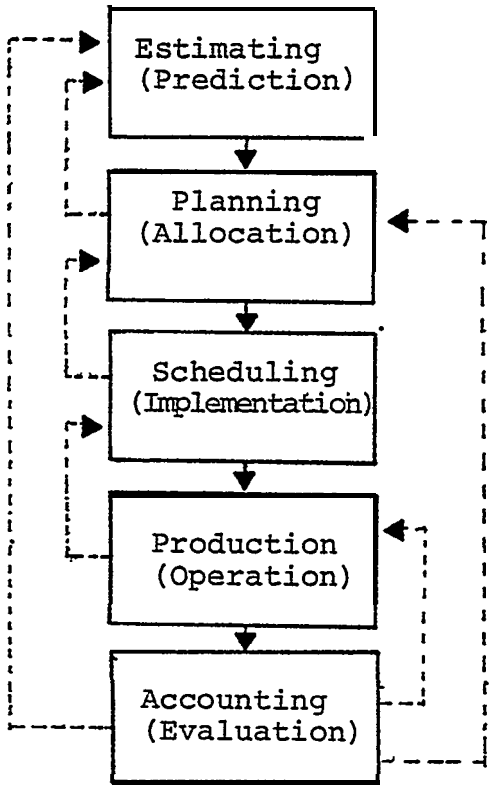

Fig. 1 Management Cycle

- Reduced bidding costs - more accurate estimates.
- Faster and more accurate planning - less uncertainty and reduced risk.
- Reduced design, engineering, approval and inspection cost and time.
- Facilitation of automation - (CAD/CAM), and of advanced outfitting techniques.
- Elimination of unnecessary variations in design factors and construction details - facilitation of batch manufacture or inexpensive commercial procurement.
- Improved customer acceptance - clear communication.
- Increased equipment reliability - reduced spares.

While many of the necessary standards will be yard unique due to facility and other considerations, there is tremendous potential for industry-wide standardization. Even the standardization of simple and seemingly mundane items such as ladders, oil cans, rag lockers, funnels, etc. can result in savings of thousands of dollars per ship, thousands of non-productive manhours "re-inventing the wheel," and time - which equals capacity, competitiveness and untold thousands of dollars from a financial standpoint.

Recommendations

In very simple terms:

(1) Shipyards which are not actively involved in the National Shipbuilding Standards Program should discuss this report internally, obtain further information as necessary, and establish a top management position on the subject. All yards are welcome as active members of SNAME Panel SP-6.

(2) Every major (and small) organization comprising the shipbuilding industry which is not active in the work of ASTM Committee F-25 should review this report; obtain further information as necessary, and again establish a top management position on participation. Every organization and individual with an interest in shipbuilding standards is encouraged to become a member of the committee.

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Developers Of Voluntary Consensus Standards For Materials, Products, Systems, and Services

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CALL FOR PAPERS:

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SHIPBUILDING STANDARDS ARE SUBJECT OF UPCOMING SYMPOSIUM

PHILADELPHIA, PA-- A call for papers is issuedfora Symposium on Shipbuilding Standards to be held at the Sheraton National, Hotel, Arlington, VA, the week of 19 October 1981. THE symposium will be hosted by Ccnmittee F-25 on Shipbuilding of the American Society for Testing and Materials (ASTM) in cooperation with the Society of Naval Architects and Marine Engineers (SNAME) Panel SP-6 on Standards and Specifications.

The symposium will cover the progress of ASTM Ccmmittee F-25 since its establishment in mid-1978. It will also examine the benefits of the national standardization program to the shipbuilding industry. Papers will identify successes and problems encountered to date and outline requirements for new standards in the future.

A special technical publication on the symposium proceedings is anticipated by ASTM. A nonprofit organization with headquaters in Philadelphia , ASTM is a leader in the development of voluntary consensus standards for materials, products, systems, and services. ASTM standards documents are created by the more than 28,500 international.

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members of the organization.

Invited papers for the 1981 symposium will cover:

- The role of the National Shipbuilding Research Prcgram-development of the U.S. Shipbuilding standards efforts , industry Coordination through SNAME Panel SP-6, and support through research projects.
- Progress of ASTM Committee F-25-the challenges this group has discovered in attempting to Consolidate U.S. shipbuilding standards and regulations and develop new standards in priority areas of need.

Authors are asked to submit papers on the state-of-the-art, addressing such areas as: the benefits and applications of ship building standards and the future oulook for shipbuilding standards development. Included in these papers could be the short. and long-term benefits to various segments of the U.S. industry. Observations from the Levingston Shipbuilding/IHI (Japan) Technology Transfer Program are also Welcome.

The symposium is expected to contribute a significant and comprehensive information base to f amiliarize the industry with the work of Committee F-25 noted Symposium Chairman R.J. Taylor of Exxon International, Inc. The symposium Ad Hoc planning COmmittee Chairman John C. Mason of Bath Iron Works also added that the information exchange should serve as a guide to the future direction of the standards effort.

Prospective authors are asked to submit at 300 word or less abstract, title, and ASTM Paper offer Form by 15 September 1980 to Kathy Greene, ASTM Publications Division, 1916 Race St. , Philadelphia, PA 19103 (215/299-5413) .

For further information on the program contact Mason at the Bath Iron Works, Corp. , 700 Washington St., Bath, ME 04530 (207/443-3311) ; or Jim De Martini, ASTM Standards Development Division, 1916 Race St. , Philadelphia, PA 19103 (215/29+5560). ASTM Offer Forms are available from Kathy Greene.

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DATE: MAY, 1980

NATIONAL SHIPBUILDING STANDARDS PROGRAMS

STATUS OF SNAME/MARAD SPONSORED SHIPBUILDING STANDARDS PROGRAMS

PROGRAM	SPONSOR	STATUS						REMARKS
		TECHNICAL DEVELOPMENT	DRAFT	F25 SUB-BALLOT	F25 BALLOT	ASTM BALLOT	FINAL PUBLICATION	
SHAFT ALIGNMENT STANDARDS:	TASK S-21							
I. GEARED STEAM TURBINE; INBOARD SHAFTING	SUM/F-25.11	OCT. 1978	OCT. 15, 1979	JAN. 9, 1980				
II. SLOW SPEED DIESEL; INBOARD SHAFTING	SUM/F-25.11	FEB. 1979						
III. GEARED STEAM TURBINE; OUTBOARD SHAFTING	SUM/F-25.22	JULY 1979	APRIL 1, 1980					
CONSTRUCTION STANDARDS, GROUP I	TASK S-23			APRIL 30, 1979&	NOV. 19, 1979 &			
SLEEVE TYPE PIPE COUPLINGS	SIW/F-25.13	SEPT. 29, 1978	FEB. 2, 1979	MARCH 24, 1980	MARCH 24, 1980			
MODULAR CASE BOARDS	SIW/F-25.13	SEPT. 29, 1978	FEB. 22, 1979	JULY 16, 1979	MARCH 3, 1980			
CASE PIPING ASSEMBLIES	SIW/F-25.13	SEPT. 29, 1978	FEB. 28, 1979	SEPT. 24, 1979& MARCH 7, 1980	MARCH 3, 1980			
WELD JOINT DESIGN FOR SHIPBOARD PIPING	SIW/F-25.13	SEPT. 29, 1978	MARCH 9, 1979	SEPT. 24, 1979	MARCH 3, 1980			
USE OF BRANCH CONNECTIONS	SIW/F-25.13	SEPT. 29, 1978	MARCH 14, 1979	JULY 16, 1979	MARCH 3, 1980			
SELECTION & APPLICATION OF THERMAL INSULATION ON PIPING & MACHINERY	SIW/F-25.13	SEPT. 24, 1978	JUNE 29, 1979	NOV. 12, 1979	MARCH 3, 1980			
DESIGN & INSTALL. OF RIGID PIPE HANGERS	SIW/F-25.13	SEPT. 29, 1978	AUG. 27, 1979	NOV. 26, 1979	MARCH 3, 1980			
GUIDELINES FOR CLEANING/FLUSHING SHIPS' PIPING SYSTEMS	SIW/F-25.13		JAN. 30, 1979 & SEPT. 20, 1979					TECH. SUBCOM. F-25.13.1 SCHEDULED TO PROCEED W/THIS TASK. UNANIMOUS AGREEMENT REACHED TO CONTINUE.
GUIDELINES FOR SHIPBOARD AUTOMATION INTERFACE CONTROL	SIW/F-25.06		MARCH 8, 1979 & OCT. 3, 1979					DELETED FROM TASK S-23 AS A CONSTRUCTION STD. & DEVELOPED AS A STD. ENGINEERING GUIDELINE INSTEAD.
CONSTRUCTION STANDARDS GROUP II	TASK S-24							
SELECTING FOOTING LENGTHS FOR PIPING SYSTEM FLANGED JOINTS	NASSCO/F-25.13	SEPT. 1, 1978	OCT. 2, 1978	JUNE 7, 1979	MAY 15, 1980			
FUNNELS	NASSCO/F-24.13	SEPT. 1, 1978	APRIL 25, 1979	SEPT. 27, 1979	MAY 15, 1980			
INSULATED WATERTIGHT BULKHEAD & DECK PENETRATIONS FOR NON-FERROUS PIPING PASSING THROUGH STEEL STRUCTURE	NASSCO/F-25.13	SEPT. 1, 1978	APRIL 25, 1979	SEPT. 24, 1979, MAY 15, 1980 & AUG. 13, 1979				
STEEL FLANGES FOR NON-FERROUS PIPING	NASSCO/F-25.13	SEPT. 1, 1978	APRIL 25, 1979	AUG. 13, 1979 & MAY 15, 1980				
PIPING SYS. DIAGRAM PREPARATION, TABLES, GENERAL NOTES, ETC.	NASSCO/F-25.13	SEPT. 1, 1978	MAY 16, 1979	OCT. 22, 1979				
WELDED SLEEVE FOR W.T. & O.T. BHD. & DK. PENETRATIONS FOR FERROUS & NON-FERROUS PIPE AND TUBING	NASSCO/F-25.13	SEPT. 1, 1978	JUNE 19, 1979	AUG. 29, 1979 & MAY 15, 1980				
COMMERCIAL STEEL AIR RECEIVERS	NASSCO/F-25.13	SEPT. 1, 1978	JAN. 11, 1980					
COMMERCIAL STEEL POTABLE WATER TANK	NASSCO/F-25.13	SEPT. 1, 1978	APRIL 8, 1980					

DATE: MAY, 1980

NATIONAL SHIPBUILDING STANDARDS PROGRAMS

STATUS OF SNAME/MARAD SPONSORED SHIPBUILDING STANDARDS PROGRAMS

PROGRAM	SPONSOR	STATUS						REMARKS
		TECHNICAL DEVELOPMENT	DRAFT	F25 SUB-BALLOT	F25 BALLOT	ASTM BALLOT	FINAL PUBLICATION	
HVAC DESIGN/CONSTRUCTION STANDARDS	TASK S-25							
Goosenecks	BIW/F-25.05	APRIL 17, 1980						Data sent for participant review April, 1980.
Terminals	BIW/F-25.05	APRIL 24, 1980						Data sent for participant review May, 1980.
Fire Dampers	BIW/F-25.05	APRIL 30, 1980						
Control Dampers	BIW/F-25.05	MAY, 1980						
Duct Hangers	BIW/F-25.05							
Duct Details	BIW/F-25.05							
WT/NWT Closures	BIW/F-25.05							
Penetrations	BIW/F-25.05							
Drafting Std.	BIW/F-25.05	MAY, 1980						Data sent for participant review April, 1980.
Volumetric Test Std.	BIW/F-25.05	MARCH, 1980						Contract signed Nov. 9, 1979.
OUTFIT CONSTRUCTION STANDARDS								
Inclined Ladders	SUN/F-25.03							
Bilge Keel Details	SUN/F-25.03							
Manholes	SUN/F-25.03							
Rails (open, storm, guard)	SUN/F-25.03							
Mach'y Space Floor Plates and Handrails	SUN/F-25.03							
Vertical Ladders & Grabs	SUN/F-25.03							
WELDED PIPING MATERIAL SCHEDULE	TASK S-28 BIW/F-25.13	FEB., 1980						

Attachment (A)

DATE: MAY, 1980

NATIONAL SHIPBUILDING STANDARDS PROGRAM

STATUS OF ASTM COMMITTEE F-25 VOLUNTARY STANDARDS DEVELOPMENT

STANDARD TITLE	SUB-COMMITTEE	STATUS						REMARKS
		TECHNICAL DEVELOPMENT	DRAFT	F25 SUB-BALLOT	F25 BALLOT	ASTM BALLOT	FINAL PUBLICATION	
VERTICAL LADDERS	F-25.03	NOV. 16, 1978	APRIL 20, 1979	OCT. 22, 1979				
JOINER DOORS & FRAMES	F-25.03	NOV. 10, 1978	APRIL 10, 1979					
BERTHS	F-25.03	NOV. 16, 1978	JAN. 25, 1979					
DIESEL INSTRUMENTATION/CONTROLS	F-25.06	APRIL 18, 1979						DRAFT NEARLY COMPLETE.
DISPENSING TANK (5 & 10 GAL.)	F-25.07	OCT. 26, 1978	MARCH 26, 1979	APRIL 20, 1979	FEB. 4, 1980	MAY 29, 1980		
MOORING WINCHES	F-25.08	MAY 23, 1979	SEPT. 9, 1979					
ANCHOR WINDLASSES	F-25.08	MAY 23, 1979	SEPT. 9, 1979					
ELEVATORS	F-25.08	MAY 23, 1979	SEPT. 9, 1979					
MAIN TURBINE SPECIFICATIONS	F-25.11	MAY 22, 1979						
AUX. TURBINE SPECIFICATIONS	F-25.11	MAY 22, 1979						
CENTRIFUGAL PUMPS	F-25.11	MAY 22, 1979						
N.P. BOLTED BONNET VALVES	F-25.13	JAN. 1979	MAY 1979					DRAFT COMPLETED UNDER NAVSEA SPONSORSHIP & SUBMITTED FOR ASTM F-25 PROCESSING IN LIEU OF DEVELOPING NEW MIL-SPEC
FIBERGLASS PIPE	F-25.13	JAN. 1979	JUNE 1979					SAME AS ABOVE.

Bath Iron Works Corporation A Congoleum Company
700 WASHINGTON STREET, BATH, MAINE 04530

Nov. 7, 1979

NATIONAL SHIPBUILDING RESEARCH PROGRAM

Encl: (1) Final Report, "A Compendium of Shipbuilding Standards"

Gentlemen:

During the past 18-24 months, a major effort has been initiated to develop a comprehensive body of standards for the U.S. shipbuilding industry. The ultimate objective of this and other elements of the Maritime Administration sponsored National Shipbuilding Research Program is to reduce both the cost and time of ship construction.

Enclosure (1) summarizes the findings and recommendations of the initial survey of existing standards and regulations in this country and selected foreign shipbuilding standards. The message is clear that we need good standards to be competitive, and it is hoped that industry will continue to support and participate in the activities of ASTM Committee F-25 on Shipbuilding Standards.

For further information on the Shipbuilding Standards Program or copies of the backup material referenced in enclosure (1) , please contact the undersigned. In the immediate future, the first of what will be a regular series of Standards Program Status Reports will be issued to all individuals receiving this mailing. Please let us know if further reports in this area should be addressed to a particular individual in your organization.

Very truly yours,

BATH IRON WORKS CORPORATION

Paul D. Svetland for

John C. Mason
Ship Producibility Research Program

JCM:lc

Encl.

G
GENERAL R
SHIP DESIGN IM
AUTOKON '71 • SHIP P
COMPUTER AIDS TO SHIP
SHIP DESIGN IMPROVEM
WELDING PROGRAM •
SURFACE PREPARATION A
SHIP DESIGN IM
COMPUTER AI
MATERIALS H
W